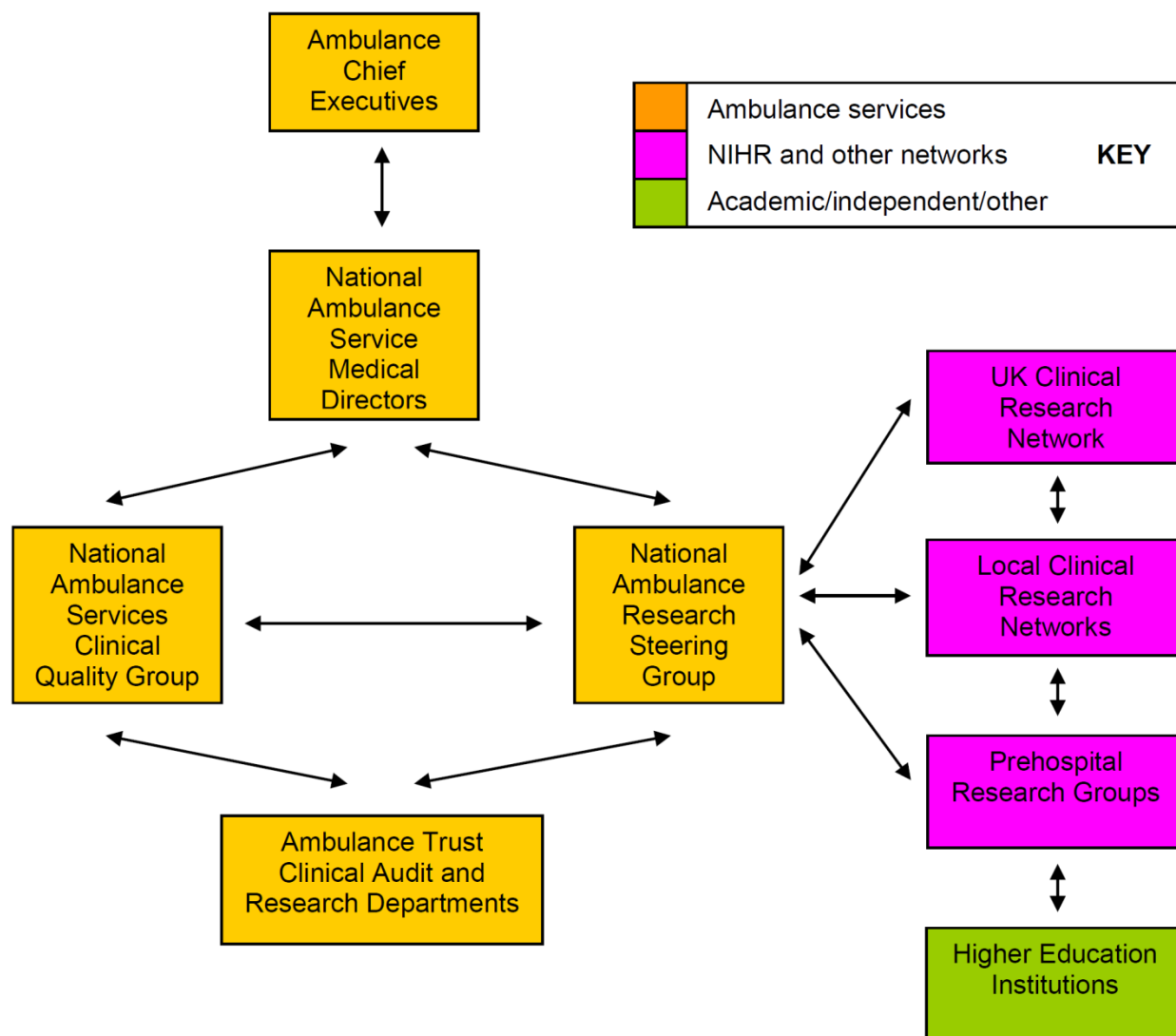


Prehospital quality improvement: past, present and future

Niro Siriwardena
University of Lincoln &
East Midlands Ambulance Service NHS Trust

4 February 2015

Supporting improvement



National Ambulance Service Clinical Quality Group



Research priorities

Development of emergency medical services (EMS) performance measures other than response times for use in performance management, audit and research

Snooks et al Emerg Med J 2009 26: 549-550

Clinical performance indicators

- Cardiac arrest
- STEMI
- Stroke
- Asthma
- Diabetes

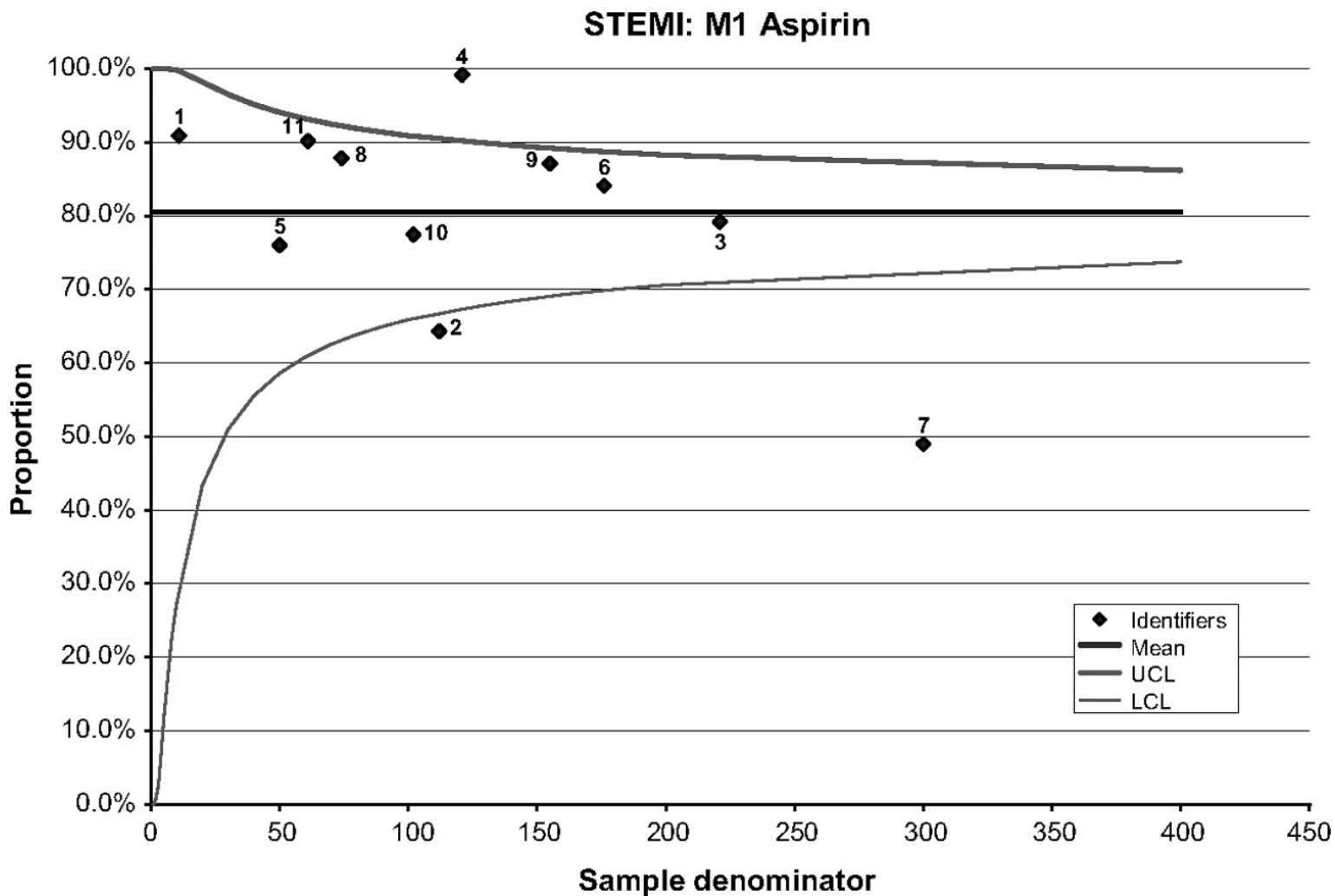
Clinical Quality Improvement Framework for Ambulance Services EMAS 2007

Measurement: data sanity



Balesracchi D. Data sanity: a quantum leap to unprecedented results. MGMA 2009.

Benchmarking



Improvement: systems



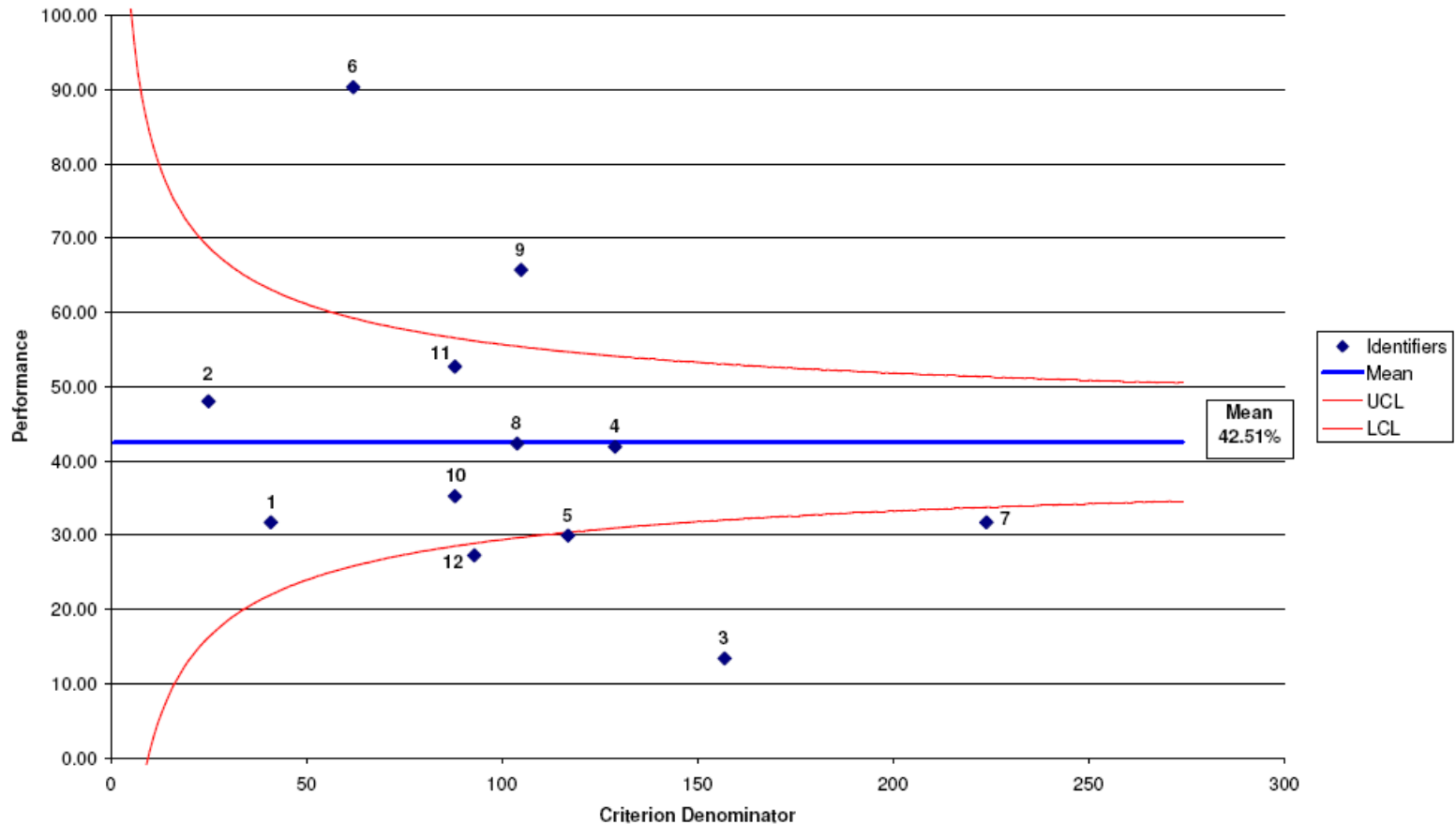
Gawande A. Reith lectures 2014 The future of medicine. Lecture 2 The century of the system.

Acute Myocardial Infarction

- M1 Aspirin
- M2 GTN
- M3 Two pain scores
- M4 Morphine given
- M5 Analgesia (morphine or Entonox) given
- Care bundle = M1+M2+M3+M5

Care bundles for AMI M1+M2+M5+M5

MC (Pilot) Care Bundle for STEMI (M1+M2+M3+M5)



Ambulance Services Cardiovascular Quality Initiative (ASCQI)

- **To improve delivery of AMI care bundle from baseline (43%) to at least 70% within 2 years**
- **To improve care delivery of stroke care bundle from baseline (83%) to > 90% within 2 years**
- **To increase diffusion of quality improvement (QI) methods to front line ambulance staff**

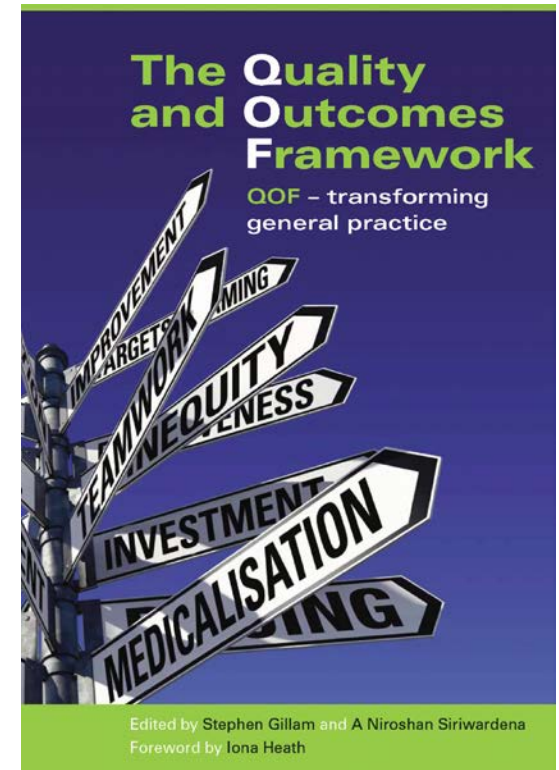
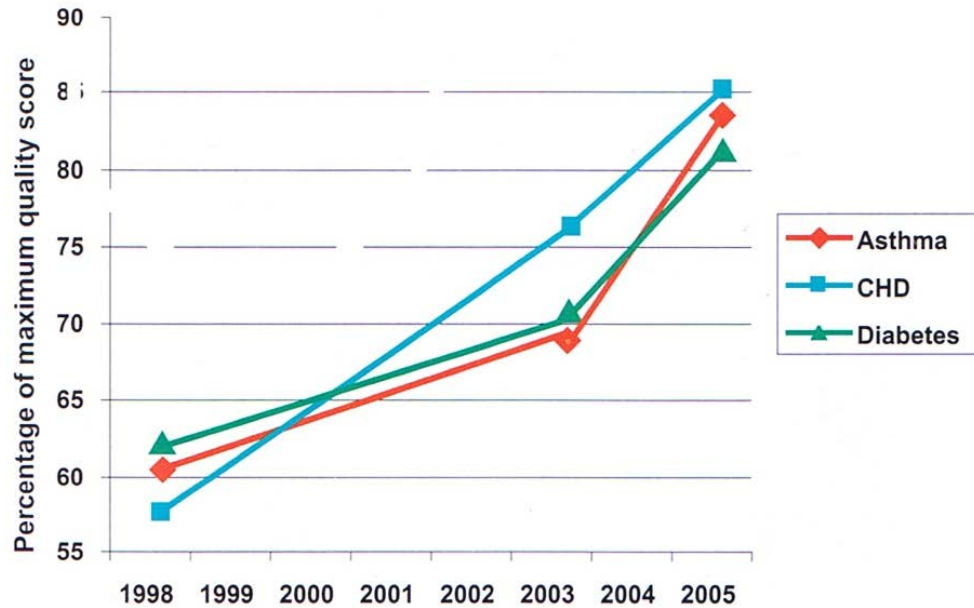
Stroke

- **S1 FAST assessment recorded**
- **S2 Blood glucose recorded**
- **S3 Blood pressure (SBP+DBP) recorded**
- **Care bundle = S1+S2+S3**

How we made improvements?

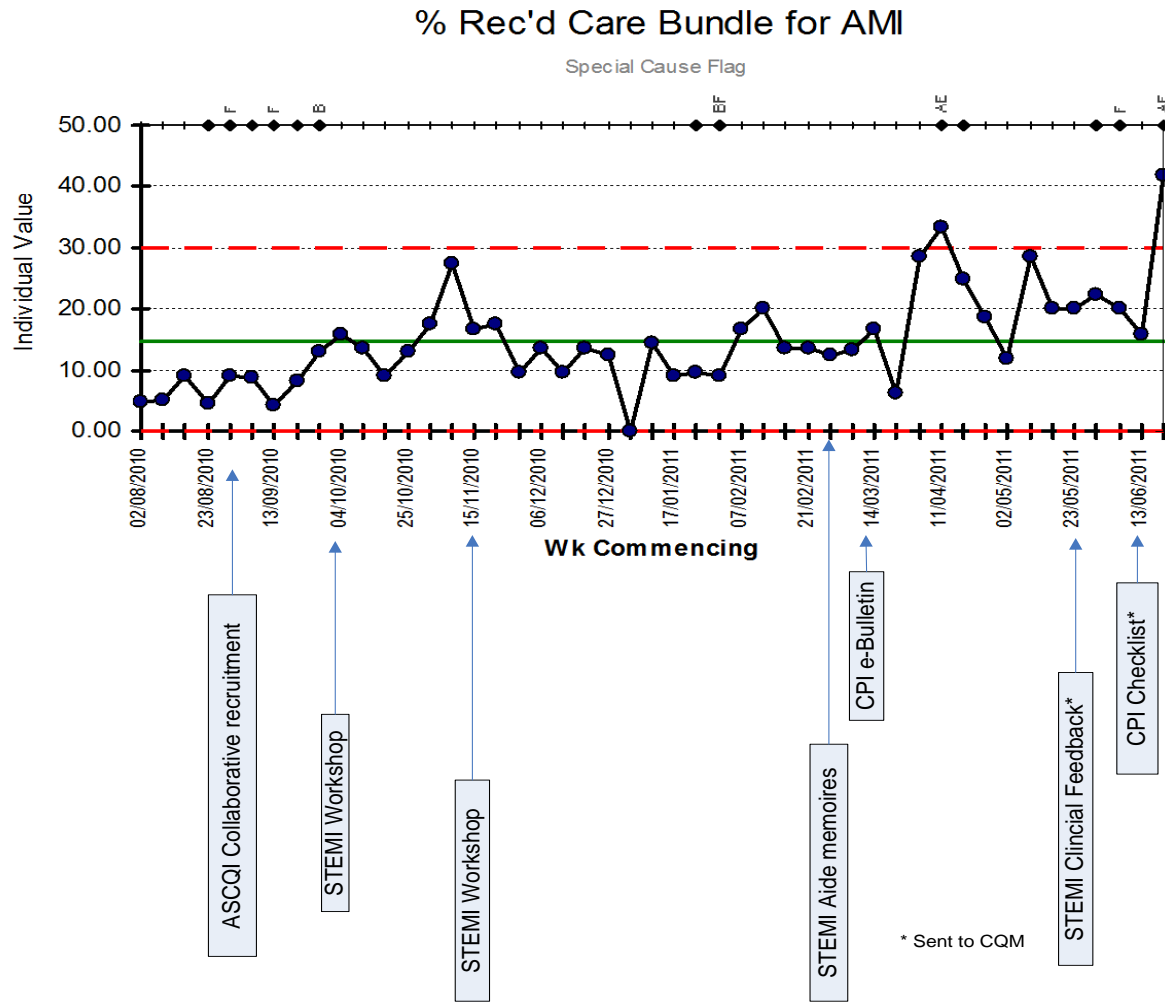
- **Focus groups & interviews (with practitioners and patients)**
- **Process mapping & critical-to-quality (CTQ)**
- **Plan-Do-Study-Act (PDSA) cycles**
- **Data collection, analysis and feedback using statistical process control (SPC)**

UK Quality Outcomes Framework

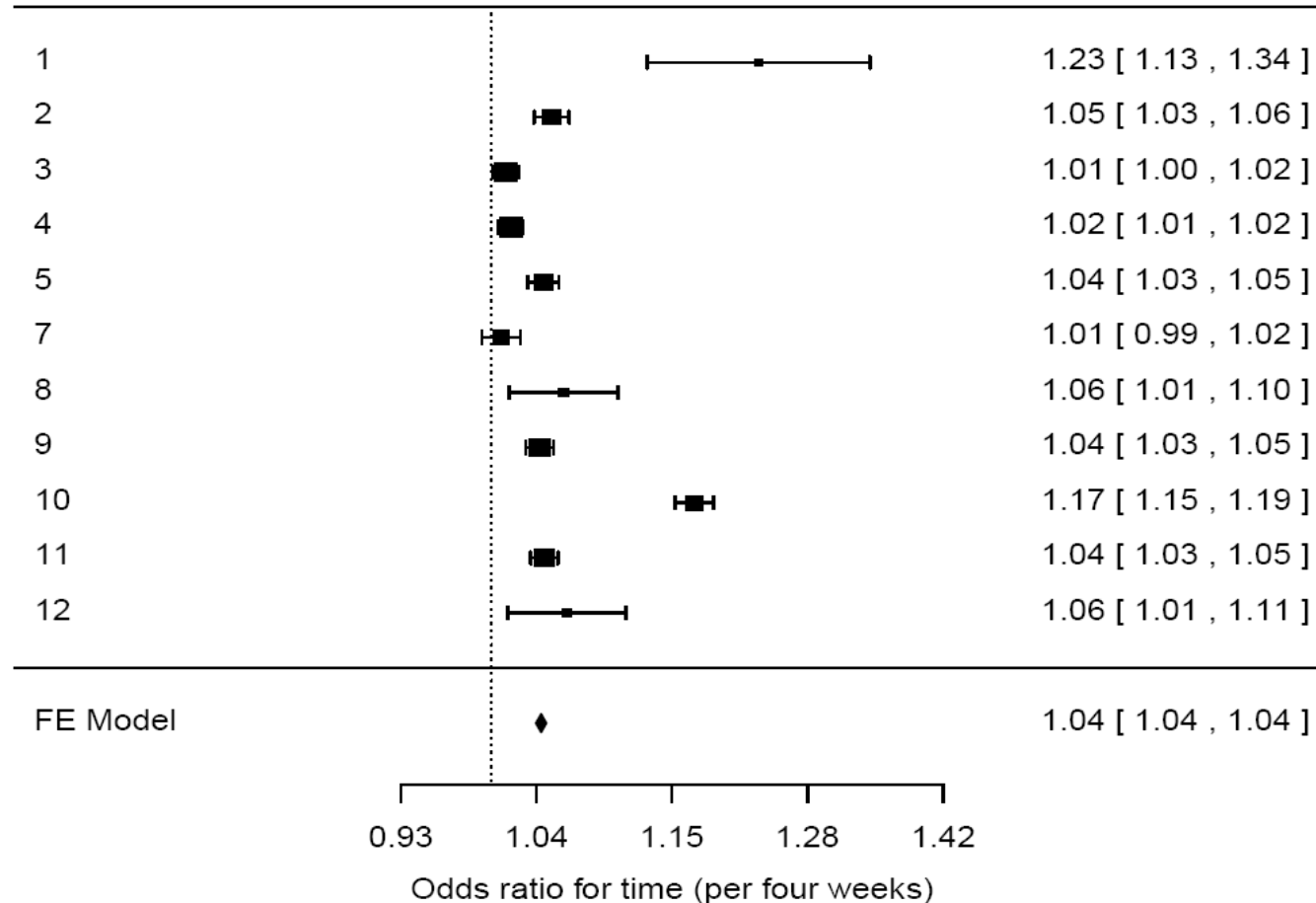


Gillam S, Siriwardena AN (eds) The Quality and Outcomes Framework, Radcliffe, Oxford 2010

Small tests of change

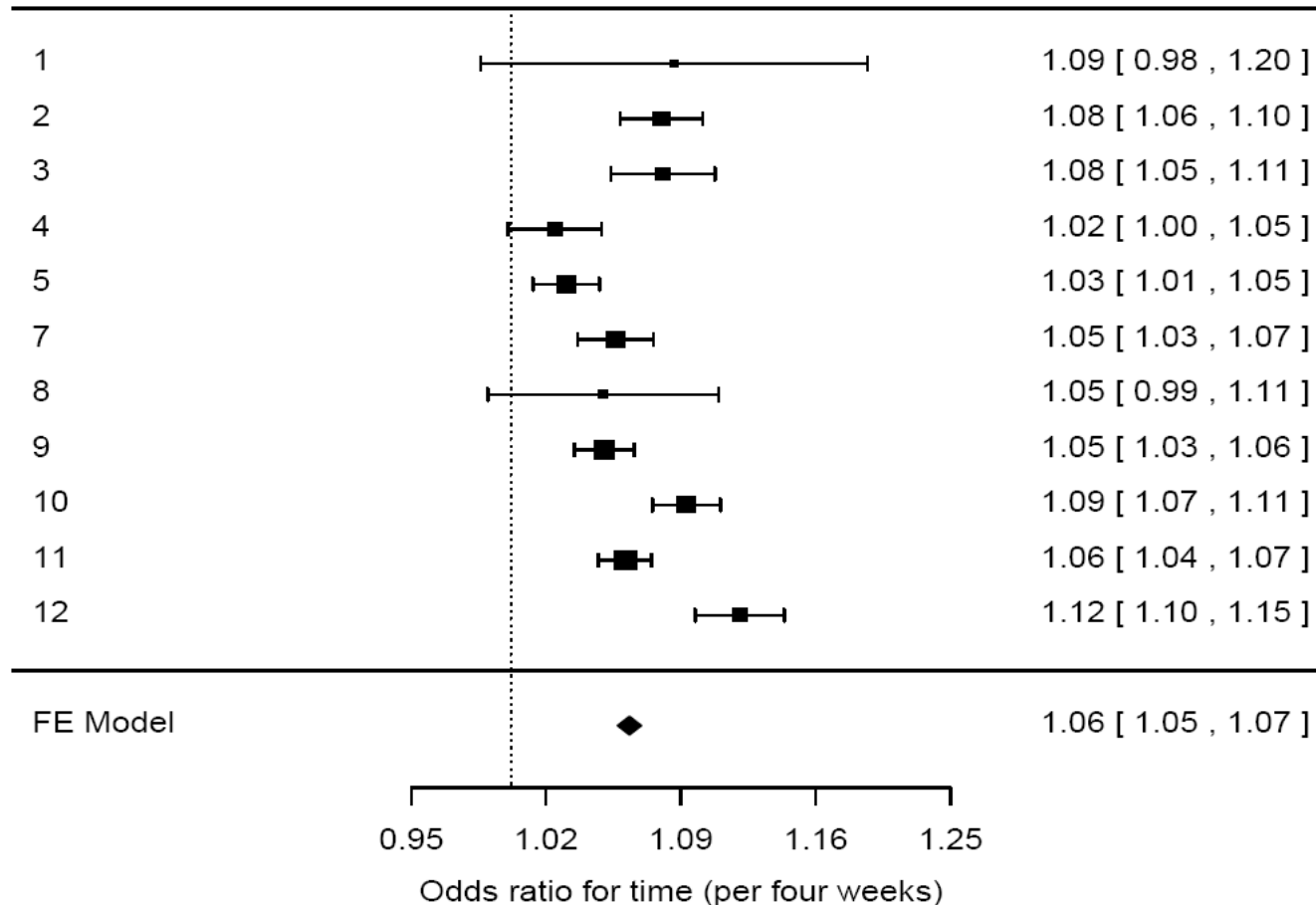


AMI care bundle



1 GWAS 2 WMAS 3 SCAS 4 LAS 5 YAS 6 SEC 7 NEAS 8 EEAS 9 SWAS 10 NNAS 11 EMAS
12 IOW

Stroke care bundle



1 GWAS 2 WMAS 3 SCAS 4 LAS 5 YAS 6 SEC 7 NEAS 8 EEAS 9 SWAS 10 NWAS 11 EMAS
12 IOW

Overall

- **Significant improvements in 10 (of 12) participating trusts for the AMI care bundle and eight (of 12) for the stroke care bundle.**
- **Eleven of 12 trusts showed a significant improvement in either the AMI or stroke care bundle**
- **Six out of twelve showed significant improvements for both AMI and stroke.**
- **Overall performance for the care bundle for AMI increased nationally in England from 43 to 79 percent and for stroke from 83 to 96 percent.**

Current/future improvement studies

- **Outcome measures: Turner, Coster, Nicholl, Snooks, O'Cathain, Campbell, Brazier, Togher**
- **Falls/technology: Snooks, Porter**
- **Stroke: Price**
- **Hypoglycaemia: Khunti**
- **Cardiac arrest: Perkins**

Research leading to improvement

- **Cardiac arrest: Chamberlain, Fothergill, Bengner**
- **Stroke: Bath, Wilson, Quinn**
- **Myocardial infarction: Quinn**
- **Epilepsy: Dixon**
- **Falls: Snooks**
- **Experience measures: Togher**
- **.....**

Lessons

- **Know yourself – be good at accurately assessing against others**
- **Delay gratification – there's no quick fix**
- **Don't aim to be the best – aim to be the best at improving**
- **Avoid contingent rewards – provide resources for improvement, not pay for performance**

Thanks

- **CaHRU team: Viet-Hai Phung, Fiona Togher, Zahid Asghar**
- **EMAS Research Team: Anne Spaight, Debbie Shaw, Mohammad Iqbal, RobSpaight, Stacey Knowles**
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- **Leicester University: Kamlesh Khunti**
- **Nottingham University: Philip Bath**
- **EMS999 Research Forum**



**Thank you for
listening!**